IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named
Inventor :   Ricardo SoonLian Lim et al.

Appln. No.:   10/603,015

Filed   :   June 24, 2003

For   :   MULTI-TIERED RETRY SCHEME FOR
READING COPIES OF INFORMATION
FROM A STORAGE MEDIUM

Docket No.:   S104.12-0041/STL 11309

Group Art Unit: 2116

Examiner: Nitin C. Patel

PRE-APPEAL BRIEF REQUEST FOR REVIEW

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Sir:

Applicants respectfully request a Pre-Appeal Brief Review of the rejection of claims 1, 7 and 13 under 35 U.S.C. §101, since the rejection is based on clear error of fact and omission of essential elements to establish a prima facie rejection.

Similar review of the rejection of claim 21 under 35 U.S.C. §102(b) based on Semba et al. U.S. Patent No. 5,504,726 is requested.

A.   Independent claims 1, 7, 13 and 21

Independent claim 1, which is directed to a process for reading information from a storage medium on which multiple copies of the information are stored, includes:

a)   establishing minimal and maximal numbers of read retry attempts;

b)   iteratively attempting reading successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the minimal number of attempts; and

c)   if the information is not successfully read in step (b), iteratively attempting reading successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the maximal number of attempts.

Independent claim 7, which is directed to a computer useable medium having a computer readable program embodied therein for addressing data to attempt to read information from a storage medium on which multiple copies of the information are stored, includes:

first computer readable program code for causing the computer to establish minimal and maximal numbers of read retry attempts;

second computer readable program code for causing the computer to iteratively attempt to read successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the minimal number of attempts; and

third computer readable program code for causing the computer to respond to an unsuccessful reading of the information by the second program code to cause the computer to iteratively attempt to read successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the maximal number of attempts.

Independent claim 13 is directed to a disc drive storage device comprising that includes firmware comprising:

first program code for causing the processor to establish minimal and maximal numbers of read retry attempts;

second program code for causing the processor to iteratively attempt to read successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the minimal number of attempts; and

third program code for causing the processor to respond to an unsuccessful reading of the information by the second program code to cause the processor to iteratively attempt to read successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the maximal number of attempts.

Independent claim 21 is directed to a method that includes "establishing minimal and maximal numbers that define two levels of retry attempts to read information on a storage medium; and storing the established minimal and maximal numbers in a device that includes the storage medium."

B.   Argument

I.   CLAIM OBJECTIONS

In section 4 of the Office Action, claim 21 was objected to because of informalities. In accordance with the Examiner's suggestion, claim 21 has been amended in a filed response to the Final Office Action.

II.   CLAIM REJECTIONS UNDER 35 U.S.C. §101

In section 6 of the Office Action, claims 1-20 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter because they were said to merely manipulate an abstract idea without a claim limitation to a practical application. Specifically, the Office Action suggests that there is no concrete, useful and tangible result at the end of "the maximal number of read retry attempts" in independent claims 1, 7 and 13.

As noted in the specification, before the present embodiments, retry attempts were always carried out a predetermined number of times (based on a single retry attempt threshold) for a particular copy of information before moving on to a next copy of the information. By establishing minimal and maximal numbers of retry attempts, the present embodiments do not have to exhaust all retry attempts based on a single threshold, but can move on to the next copy of information after the minimal number of retry attempts is reached. Only if retry attempts to read all copies of information, based on the minimal number of retry attempts fail, the retry process continues based

on the maximal number of retry attempts. Events that may occur after "the maximal number of read retry attempts" is reached are irrelevant to the present embodiments.

Accordingly, the process being claimed in claim 1 is directed to iterative attempts at reading and not what happens after the iterative attempts. Such later events and results are irrelevant to claim 1.

The conditional statement in the last paragraph of claim 1 expressly provides a positive limitation that includes "iteratively attempting reading successive copies of the information until either the information is successfully read or the information is not successfully read from any copy of the information after the maximal number of attempts."

Thus, the maximal number provides a tangible bound on the number of iterative read attempts performed on the storage medium during step (c) of claim 1. Step (c) therefore provides a tangible result (iteratively attempting to read) on a physical device (storage medium) and provides a tangible bound to the number of iterations. This satisfies the §101 requirement of a concrete, useful and tangible result for a claim and, as noted above, any subsequent events and results are irrelevant to claim 1.

Claims 7 and 13 produce useful, concrete and tangible results since they also include elements similar to step (c) of claim 1. As such, claims 1-20 all define statutory processes and do not merely manipulate an abstract idea but instead produce useful, concrete and tangible results. Thus, the rejection of claims 1-20 under 35 U.S.C. §101 should be withdrawn.

III.   CLAIM REJECTIONS UNDER 35 U.S.C. §102

In section 11 of the Office Action, claim 21 was rejected under 35 U.S.C. §102(b) as being anticipated by Semba, U.S. Patent No. 5,504,726 B1.

As noted above, claim 21 includes "establishing minimal and maximal numbers that define two levels of retry attempts to read information on a storage medium."

The Semba reference deals in general with the calibration of tracking error signals and focus error signals when an optical disk drive is in normal operation mode. The cited FIG. 3 and language (col. 5, lines 1-27; col. 6, lines 5-13, 35-39) of Semba describe the utilization of minimum and maximum values of a tracking error signal in a specific method embodiment for

calibrating tracking error signals. The Office Action suggests that the minimum and maximum values of the tracking error signal are the same as the minimal and maximal numbers in the above-noted element of claim 21. Applicants respectfully assert that minimum and maximum values of a signal (such as the tracking error signal in Semba) have nothing to do with minimal and maximal numbers that define two levels of retry attempts to read information on a storage medium. Thus, Semba does not anticipate claim 21.

IV.   CONCLUSION

Applicants respectfully submit that the dependent claims are also allowable at least by virtue of their dependency, either directly or indirectly, from the allowable independent claims. In view of the foregoing, Applicants respectfully request reconsideration and allowance of claims 1-21. Favorable action upon all claims is solicited.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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By:_____

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